



December 24, 2018
Kleinfelder Project No.: 20190476.001A

Mr. Jim McNulty
Development Services Manager
Murray City Public Services
4646 South 500 West
Murray, Utah 84123

**SUBJECT: 2018 ANNUAL REPORT
OF SEMI-ANNUAL BARRIER MAINTENANCE AND MONITORING
MURRAY COSTCO WHOLESALE WAREHOUSE #764
5201 SOUTH INTERMOUNTAIN DRIVE
MURRAY, UTAH**

Dear Mr. McNulty:

This report documents surface barrier monitoring, storm drain inspections and barrier maintenance conducted at the Murray Costco Wholesale Warehouse (Site) referenced above during 2018. Semi-annual barrier monitoring and storm drain inspections were conducted by Kleinfelder personnel at the COSTCO Wholesale Warehouse (Site) referenced above on May 31 and November 30, 2018.

The barriers were inspected according to the Site Barrier Maintenance and Monitoring Plan (BMMP) dated August 8, 2002, and amended June 6, 2016. The inspections included visually examining select storm drain inlets and ground surface barriers, noting defects (if any), and making recommendations for repairs, if required. Information collected during the inspections was recorded on the Barrier Inspection Checklists and Map and the Storm Drain Inspection Checklists provided in Attachment A. In general, typical wear and tear was observed on the Site landscaping and asphalt and concrete barriers, as described in this report. No breach of the surface barriers was observed in either inspection, and the Site surface barriers appear to be managed and maintained in accordance with the BMMP.

LANDSCAPING BARRIERS

During the May 31, 2018 inspection, excavated landscaping (grass) and soil were observed at ground surface in the southeast corner of the Site. The excavated soil and grass were covered with a weighted tarp. The excavation was the result of utility repair work that was conducted in accordance with an approved permit from Murray City. Excavated soil was managed in accordance with the BMMP.

During the May 31 inspection minor (less than 6 inches) settling was observed in one landscaped area in the north portion of the Site and one landscaped area in the west portion of the Site. The settlement did not create a breach or exposure to subsurface soils. The remainder of the landscaping barriers were did not display signs of settlement, soil erosion, or soil damage from vehicles; soil depressions or differences in barrier elevations with standing water; channels in the soil; damaged, missing, or ineffective erosion control systems.

During the November 30, 2018 inspection, the landscaping in the former utility excavation near the southeast corner had been repaired, in accordance with the BMMP. No stockpiled soil or landscaping breach were observed along the site perimeter during our November 2018 inspection.

ASPHALTIC CONCRETE BARRIERS

During the May and November inspections, asphaltic barriers contained cracks indicative of normal wear, many of which were sealed with tar. Slight settling was observed in various locations throughout the Site. One pothole was observed during the May inspection that was repaired prior to the November inspection. It should be noted that during the inspections, Kleinfelder did not observe soils breaching the asphalt and concrete surfaces in the observed areas of cracking and settling.

CONCRETE BARRIERS

Concrete damage, up to 6 inches in diameter, was observed in the northeast portion of the gas station, however the worn concrete did not extend to, or expose the underlying soil. In addition, minor concrete settling was observed in the gas station area and along a few parking curbs and adjacent to storm drain drop inlets (SDDIs) in the west, south, and north portions of the Site. The remainder of the concrete barriers were in place, including sidewalks, curbs, and gutters, loading platforms, and parking areas. Large cracks and separations were not identified during our inspections of the sealed joints (present at the fuel center).

WAREHOUSE BUILDING (CONCRETE BARRIER)

Minor concrete damage was observed along the northeast and south warehouse perimeter. The remainder of the concrete barriers were in place around the exterior of the warehouse building, and concrete joints were sealed. No significant cracks, holes, settlement areas, or other physical features that would indicate the integrity of the barrier had been compromised were observed during the barrier inspection. No maintenance actions are needed at this time.

STORM DRAIN DROP INLET (SDDI) INSPECTION

Select SDDIs were inspected to assess whether groundwater is leaking into the storm drain system via the drain vaults. Based upon previous Site investigations and storm drain repairs, inspections of SDDI-1 through SDDI-9 are included as part of the Site BMMP. Inspection and reporting requirements are outlined in Addendum 2 to the BMMP, dated June 6, 2016.

The selected storm drains (SDDI-1 through SDDI-9) were inspected by a Kleinfelder field engineer on May 31 and November 30, 2018. Standing water was observed in the nine inspected SDDIs at the approximate level of the inlet and outlet piping. The sidewalls of the storm drains were generally dry; however, a sheen of water was observed weeping from the west wall of SDDI-3 following landscaping irrigation the morning of the May 31, 2018 inspection. The source of the seeping water appeared to be from a depth between 1.5 and 4 feet below grade. Based on the shallow depth of the seeping water, the source of the water may have been the landscape watering.

Kleinfelder collected a water sample from SDDI-3 on June 5, 2018, to assess whether the seeping water was resulting in migration of subsurface impacts to the storm water system. The groundwater sample was submitted to Pace Analytical for analysis of dissolved arsenic. A dissolved arsenic concentration of 0.0104 milligrams per liter was detected in the groundwater sample collected from SDDI-3. Based on the analytical results, the water seepage observed in SDDI-3 in May does not appear to have the potential to significantly impact storm water within the storm drain. The analytical results are provided in Attachment B. In addition, water seepage was not observed in SDDI-3 during the November inspection.

A slight seepage or weeping was observed on the SDDI-2 wall during the November inspection; however, it did not appear to have the potential to significantly impact storm water within the drain. Kleinfelder will monitor the SDDI-2 seepage during future inspections for changes in the wall integrity. No groundwater leaks were evident in the storm drains, and the previously repaired areas appeared to remain intact with no apparent leakage. Checklists from the May and November inspections are included in Attachment A.

SITE BARRIER REPAIR WORK

No Site repairs were conducted to the storm drains in 2018. Maintenance of the Site pavement appeared to have been performed to repair cracks and potholes. The utility repairs conducted in the southeast Site perimeter were conducted in accordance with the BMMP and a Smelter Site Overlay District (SSOD) excavation permit, which was obtained from Murray City. No stockpiled soil or evidence of a landscaping breach was observed during the November 2018 inspection.

MONITORING INSPECTION SCHEDULE

Costco's owner representative will conduct barrier inspections on a semi-annual basis to ensure the barriers are maintained in a manner to prevent human exposure to subsurface soils. The next inspection is scheduled for May 2019.

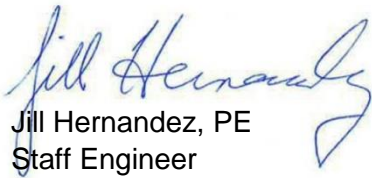
LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and

recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided. Please contact us at 801.261.3336 if you have any questions or desire additional information.

Sincerely,

KLEINFELDER, INC.



Jill Hernandez, PE
Staff Engineer



Corinne Hillard, PG
Sr. Project Manager

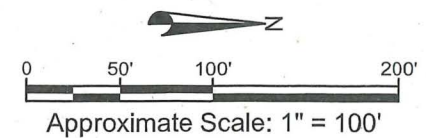
ATTACHMENTS

Attachment A: Barrier Inspection Checklists – May 31 and November 30, 2018
 Barrier Inspection Map – November 30, 2018
 Storm Drain Inspection Checklists - May 31 and November 30, 2018
Attachment B: Analytical Results of SDDI-3 Water Sample

cc: Diane Carter – COSTCO
 Jeff Warner – COSTCO
 Michael Storck – Utah DERR
 Erna Waterman- EPA

ATTACHMENT A

Barrier Inspection Checklists
Barrier Inspection Map
Storm Drain Inspection Checklists



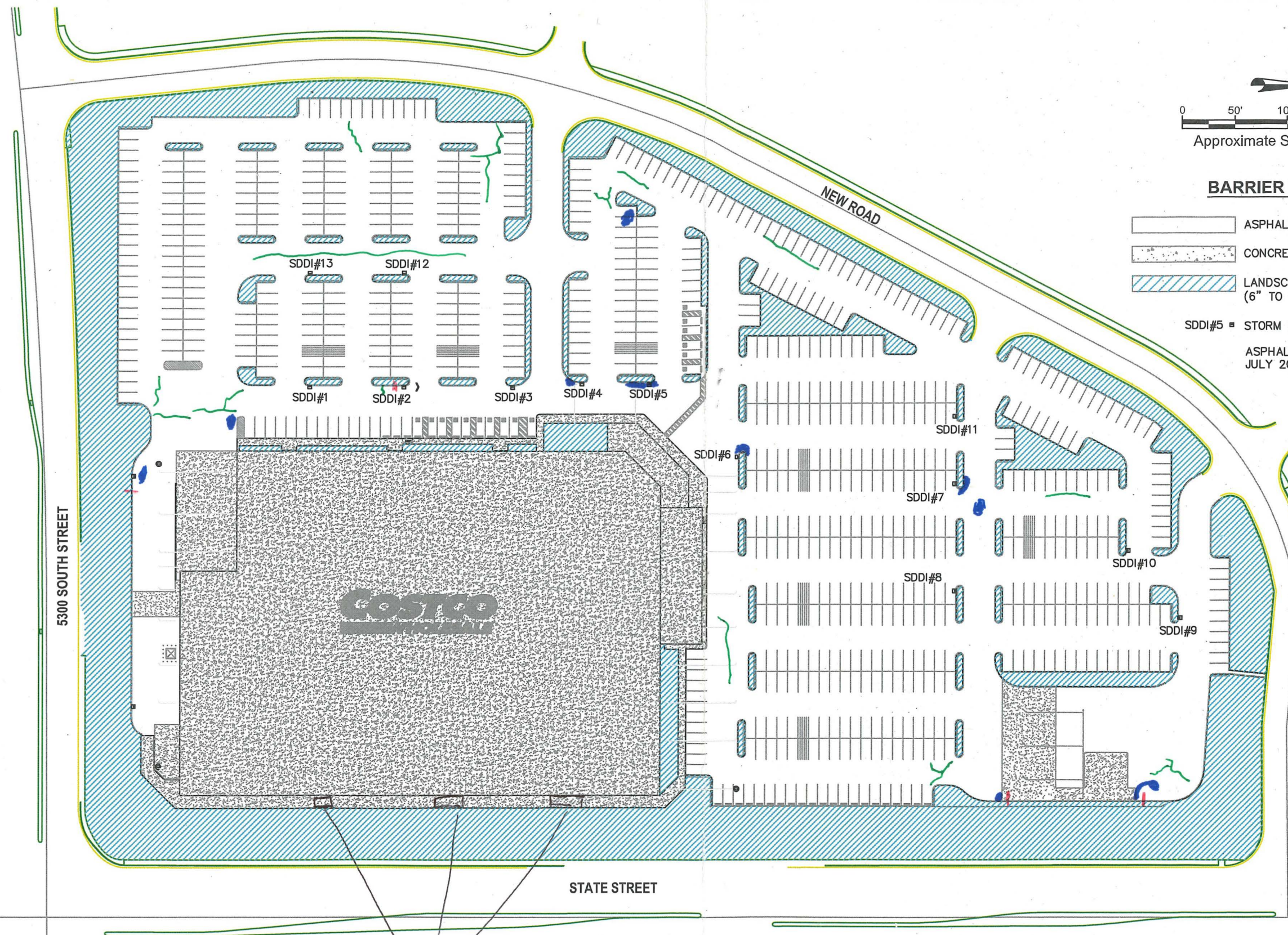
BARRIER LEGEND

- ASPHALT PAVEMENT (APPROX. 375,000 SQ FEET)
- CONCRETE SURFACE (APPROX. 182,000 SQ FEET)
- LANDSCAPE AREA (APPROX. 151,000 SQ FEET) (6" TO 12" OF TOPSOIL)

SDDI#5 ■ STORM DRAIN INLET

ASPHALT PAVEMENT REPAIR COMPLETED IN JULY 2003

- CONCRETE DAMAGE
- SETTLING
- CRACKED SEALANT OR PAVEMENT



SLC3d318.dwg



COSTCO - Murray Smelter Site
5300 South State Street
Salt Lake City, Utah

SITE BARRIER PLAN

FIGURE

1

**COSTCO Wholesale Warehouse
Barrier Inspection Checklist**

Date: 5/31/18

Inspector: J. Hernandez

Barrier Type: Interior Landscaping

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: The interior landscaping appeared to be in good condition, with a couple of minor settled areas on the west side of the property.

Barrier Type: Perimeter Landscaping

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: The perimeter landscaping appeared to be in good condition, with one exception. The landscaping has been excavated in the southeast corner of the site. The excavation appears to be related to utility work. The excavated soil & landscaping is covered with a tarp & weighted down.

Barrier Type: Concrete Surfaces

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Small areas of concrete damage were observed; however, the concrete surfaces are generally in good condition.

Barrier Type: Asphalt Pavement - North Lot

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Several areas of minor asphalt pavement ^{damage} were observed in the north lot; however, the pavement was generally observed to be in good condition.

Barrier Type: Asphalt Pavement - South Lot

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Several areas of minor asphalt pavement damage were observed in the south parking lot; however, the pavement was generally observed to be in good condition.

Barrier Type: _____

Is the barrier in place and properly maintained: Yes ☐ No ☐ Not Applicable ☐

Observations/Comments: _____

Inspection Results:



Costco Wholesale Warehouse Murray, Utah

Storm Drain Inspection Checklist

DATE: 5/31/18
INSPECTOR: J. Hernandez

1) Are seeps, cracks, or leaks visible in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-2:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-3:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Water is seeping from crack either 1.5' or 4' below grade on west wall, possibly both.
SSDI-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-5:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-6:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-8:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Minor water weeping on north wall & northwest corner.
SSDI-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	

2) Is standing water present in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-2:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-3:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-4:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-5:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-6:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-7:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-8:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-9:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	

If Yes:

When was the last storm event? 5/30/18 ~ 1800

Have any activities been conducted in the drainage area or all up slope drain inlet areas that may have put water in the system?

Yes ☒ No ☐ Just irrigating the plants in the landscaped areas.

Any evidence of irrigation water going into the system?

Yes ☒ No ☐ Irrigation running at 0740.

3) Is running water present in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-2:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-3:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-5:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Water from irrigation system running through the drain.
SSDI-6:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	"
SSDI-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-8:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Water from irrigation system running through the drain.
SSDI-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	

If Yes:

When was the last storm event?

Yes ☒ No ☐ 5/30/18 ~ 1800

Is running water present in up slope storm drains?

Yes ☐ No ☒

Is running water present in down slope storm drains?

Yes ☒ No ☐ Some of the down-slope drains had minor amounts of water running through them, likely from the irrigation on-site.

Corrective Action Taken:

**COSTCO Wholesale Warehouse
Barrier Inspection Checklist**

Date: 11/30/18
Inspector: R. STELLA

Barrier Type: INTERIOR LANDSCAPING

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: The interior landscaping appeared to be in good status.

Barrier Type: PERIMETER LANDSCAPING

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: The perimeter landscaping appeared to be in good status.

Barrier Type: CONCRETE SURFACES

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Few locations were noticed where the concrete surfaces were damaged, however overall the concrete surfaces resulted to be in good condition.

Barrier Type: ASPHALT PAVEMENT - SOUTH LOT

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Some of the areas presented asphalt pavement minor damages. However the pavement in the South lot was overall in good condition.

Barrier Type: ASPHALT PAVEMENT - NORTH LOT

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: Some of the areas presented asphalt pavement minor damages. However the pavement in the North lot was generally in good condition.

Barrier Type: _____

Is the barrier in place and properly maintained: Yes ☐ No ☐ Not Applicable ☐

Observations/Comments: _____

Inspection Results:



Costco Wholesale Warehouse Murray, Utah

DATE:

11/30/18

INSPECTOR:

R. STELLA

Storm Drain Inspection Checklist

1) Are seeps, cracks, or leaks visible in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	WATER IS SEEPING FROM CRACK EAST & WEST WALL BELOW GRADE
SSDI-2:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
SSDI-3:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-5:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-6:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-8:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
SSDI-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	

2) Is standing water present in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-2:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-3:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-4:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-5:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-6:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-7:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-8:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI-9:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>

If Yes:

When was the last storm event? 11/30/18

Have any activities been conducted in the drainage area or all up slope drain inlet areas that may have put water in the system?

Yes ☐ No ☒

Any evidence of irrigation water going into the system?

Yes ☐ No ☒

3) Is running water present in the storm drain?

If yes, describe:

SSDI-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-2:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-3:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-5:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-6:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-8:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

If Yes:

When was the last storm event?

Yes ☐ No ☐

Is running water present in up slope storm drains?

Yes ☐ No ☐

Is running water present in down slope storm drains?

Yes ☒ No ☐

Small puddles of water close to down-slope drains, likely from the rainfall.

Corrective Action Taken:

ATTACHMENT B

Analytical Results

June 13, 2018

GSC/Kleinfelder - SLC

Sample Delivery Group: L999326
Samples Received: 06/06/2018
Project Number:
Description: Costco-Murray Water Sample

Report To: Corinne Hillard
849 W Levoy Dr, Ste 200
Salt Lake City, UT 84123

Entire Report Reviewed By:



Jason Romer
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
SDDI-3-6-5-2018 L999326-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Metals (ICP) by Method 6010B	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SDDI-3-6-5-2018 L999326-01 GW

Collected by
J Micovic

Collected date/time
06/05/18 08:15

Received date/time
06/06/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1122998	1	06/12/18 11:45	06/13/18 12:13	CCE

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	0.0104		0.0100	1	06/13/2018 12:13	WG1122998

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3317577-6 06/13/18 13:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00650	0.0100

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3317577-1 06/13/18 11:08 • (LCSD) R3317577-2 06/13/18 11:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	0.898	0.981	89.8	98.1	80.0-120			8.74	20

L1000460-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1000460-06 06/13/18 11:15 • (MS) R3317577-4 06/13/18 11:22 • (MSD) R3317577-5 06/13/18 11:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	U	1.03	1.05	103	105	1	75.0-125			2.12	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gi
⁸ Al
⁹ Sc

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

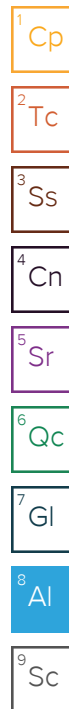
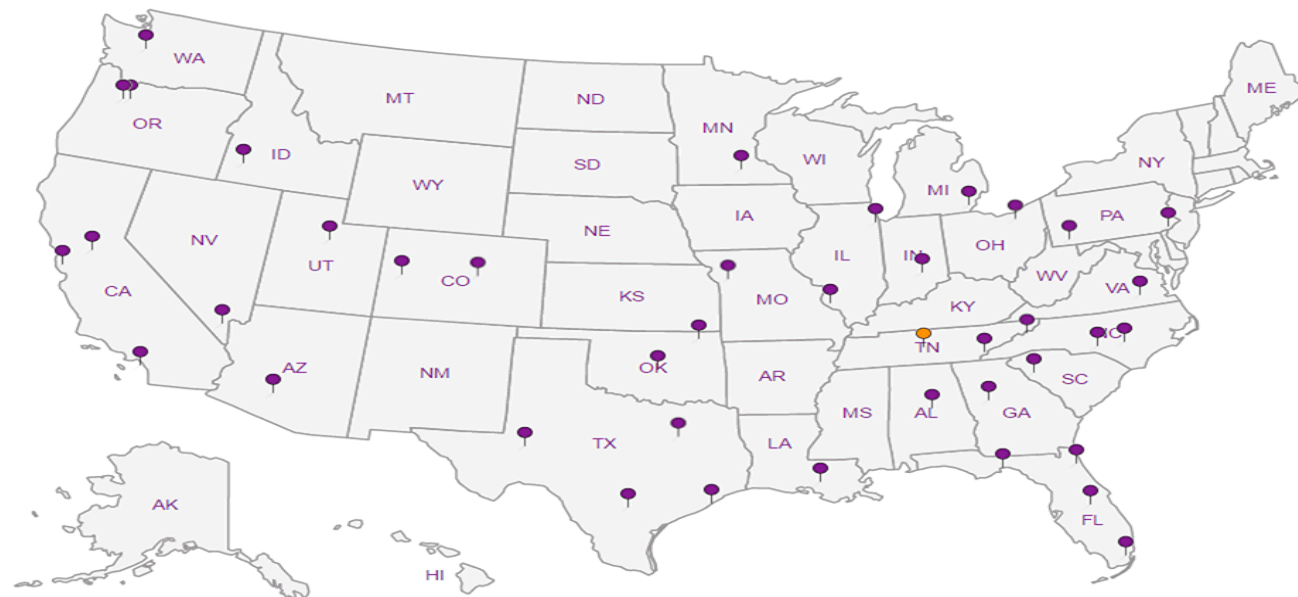
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



Kleinfelder
849 W Leavy Dr.
Ste. 200
Taylorville, UT 84123

Billing Information:

KLEINTOT

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page of



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 999326
H217

Acctnum: KLEINTOT

Template:

Prelogin:

TSR: Jason R.

PB:

Shipped Via:

Remarks

Sample # (lab only)

Report to:
CORIMUE INLLARD

Email To:

CINLLARD@KLEINFELDER.COM

Project COSTCO-MURRAY

Description: WATER SAMPLE

City/State
Collected: SLC, UT 41

Phone: 801-261-3336
Fax:

Client Project #

Lab Project #

Collected by (print):

J. MICONE

Site/Facility ID #

P.O. #

20190476

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day

Date Results Needed

Immediately
Packed on Ice N X Y

STANDARD

No.
of
Cntrs

DISSOLVED ARSENIC

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

SDD-EJH

SDDI-3-6-5-2018 (WATER)

6/5/18 08:15

1

X

-01

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: FILTER IN LAB

Samples returned via:

UPS FedEx Courier SWA

Tracking #

526 SLC 2330 1504

Relinquished by: (Signature)

Date:

6/5/18

Time:

13:00

Received by: (Signature)

Trip Blank Received: Yes ☒ No

HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

6/5/18

Time:

1700

Received by: (Signature)

Temp: °C Bottles Received: 1

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

6/6/18

Time:

1000

Hold:

Condition:

NCF / OK

Preservation Correct/Checked: ☒ Y ☐ N

VOA Zero Headspace: ☒ Y ☐ N

Sufficient volume sent: ☒ Y ☐ N

Correct bottles used: ☒ Y ☐ N

Bottles arrive intact: ☒ Y ☐ N

COC Signed/Accurate: ☒ Y ☐ N

COC Seal Present/Intact: ☒ Y ☐ N

Sample Receipt Checklist